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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,107

12/09/2005

Igor Lubomirsky

LUBOMIRSKY1

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EXAMINER

NGUYEN, KHANH TUAN

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

10/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,107	Applicant(s) LUBOMIRSKY, IGOR	
	Examiner KHANH T. NGUYEN	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,21-24 and 38-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-20 and 25-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/28/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The preliminary amendment filed on 12/09/2005 is entered and acknowledged by the Examiner. Claims 1, 4-20, and 25-37 are currently pending with claims 2-3, 21-24 and 38-40 withdrawn from further consideration in the instant application.

2. Applicant's election with traverse of invention of Group A (claims 1-20 and 25-40) and election of species of Group II, in the reply filed on 08/11/2008 is acknowledged. The traversal is on the grounds(s) that the inventions are restricted base on U.S. restriction practice rather than PCT Rules 13.1 and 13.2. This is not found persuasive because the invention of Group A lack a common special technical feature such as a step of applying mechanical strain to a substantially amorphous compound as recited in Group B. The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

3. The information disclosure statement (IDS) filed on 03/28/2006 has been considered. An initialed copy accompanies this Office Action.

Drawings

4. The drawing(s) filed on 12/09/2005 has been considered.

Claim Objections

5. Claims 1 and 29-30 are objected to because of the following informalities:

The word "pyroelectric" at line 3 in claim 1 is misspelled and should be replaced with –pyroelectric–.

The word "filed" at line 4 in claims 29 and 30 is misspelled and should be replaced with –field–.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

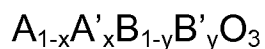
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1, 4, 15, 18, 25, 26, 29, 30, 36, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. 4,601,883 (hereinafter Sekido).

Sekido teaches a sensor element comprising of a substrate made of an oxide having a formula:



wherein A maybe selected from La, Ce, Pr and Nd, A' maybe selected from Ca, Sr, and Ba, B is a transition metal of cobalt (Co), B' maybe selected from Fe, Mn, V and Ti, x may range from 0.6 to 0.95 and y may range from 0.2 to 0.9 with x equal to $\frac{1}{2}(1+y)$. (Abstract). Sekido teaches a similar inorganic compound as recited in claim 4, thus the oxide compound of Sekido would inherently possess similar pyroelectric properties as recited in claims 1, 15, and 18 because the court had held that structurally similar compounds are generally expected to have similar properties. *In re Gvurik*, 596 F. 2d 1012, 201 USPQ 552. Further, the court has held that compositions (inorganic compound) are indefinite for being defined in terms of properties (pyroelectric properties) alone. *Ex parte Spacht*, 165 USPQ 409 (PO Bd Pat App 1969); *Ex parte*

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Slob157 USPQ 172 (PO Bd Pat. App 1967); *Ex parte Pulvari*, 157 USPQ 169 (PO Bd Pat. App 1966). The reference specifically or inherently meets each of the claimed limitations in their broadest interpretations. The reference is anticipatory.

8. Claims 1, 4-6, 8, 9, 11, 12, 15, 17-20, 25-30, 36, and 37 are rejected under 35 U.S.C. 102(a/e) as being anticipated by U.S. Pub. 2002/0117647 A1 (hereinafter Roeder), now U.S. Pat. 6,692,569 B2.

Roeder teaches a (Pb, Sr, Ca, Ba, Mg)(Zr, Ti, Nb, Ta)O₃ film having pyroelectric property [0003 and 0005]. In one embodiment, Roeder teaches the said film comprising a Pb(Zr,Ti)O₃ perovskite crystal material having a formula Pb_xSr_{1-x}Zr_yTi_{1-y}O₃ wherein x has a value of from about 0.86 to about 0.93 and y has a value of from 0.5 to about 0.60 [0038-0041]. The perovskite crystal material of Roeder is readable on the claimed inorganic compound. Thus, perovskite crystal material of Roeder is expected have a similar pyroelectric property as claimed since the court had held that structurally similar compounds are generally expected to have similar properties. In re Gvurik, 596 F. 2d 1012, 201 USPQ 552. Further, the court has held that compositions (inorganic compound) are indefinite for being defined in terms of properties (pyroelectric properties) alone. *Ex parte Spacht*, 165 USPQ 409 (PO Bd Pat App 1969); *Ex parte Slob157 USPQ 172* (PO Bd Pat. App 1967); *Ex parte Pulvari*, 157 USPQ 169 (PO Bd Pat. App 1966). In another embodiment, Roeder teaches the said film maybe deposited onto a Pt or Si substrate at a thickness of 0.34 microns [0155-0157]. The reference

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specifically or inherently meets each of the claimed limitations in their broadest interpretations. The reference is anticipatory.

9. Claims 1, 4-6, 8, 9, 11, 12, 14-20, 25-27, 29-30, 36, and 37 are rejected under 35 U.S.C. 102(a/e) as being anticipated by U.S. Pub. 2002/0177008 A1 (hereinafter Shirakawa), now U.S. Pat. 6,803,122 B2.

Shirakawa teaches a PLZT compound obtained by doping PZT with La represented by a formula $(\text{Pb}_{1-x}\text{La}_x)(\text{Zr}_{1-y}\text{Ti}_y)\text{O}_3$ [0060]. The PLZT compound of Shirakawa is readable on the claimed compound having $(\text{A}_x\text{B}_{1-x})(\text{C}_y\text{D}_{1-y})\text{O}_3$ wherein A is La; B is Pb; C is Ti; D is Zr; n is 3; x and y are greater than zero but less than 1.

Shirakawa also teaches a layer containing $(\text{Ba}_{1-x}\text{Pb}_x)\text{TiO}_3$ [0102]. The $(\text{Ba}_{1-x}\text{Pb}_x)\text{TiO}_3$ layer of Shirakawa is readable on the claimed compound having $(\text{A}_x\text{B}_{1-x})\text{DO}_3$ wherein A is Pb; B is Ba; D is Ti; n is 3; y is zero and x is greater than zero but less than 1. The $(\text{Pb}_{1-x}\text{La}_x)(\text{Zr}_{1-y}\text{Ti}_y)\text{O}_3$ and $(\text{Ba}_{1-x}\text{Pb}_x)\text{TiO}_3$ compound of Shirakawa are readable on the claimed inorganic compounds. Thus, the said compounds of Shirakawa is expected have a similar pyroelectric property as claimed since the court had held that structurally similar compounds are generally expected to have similar properties. In re Gvurik, 596 F. 2d 1012, 201 USPQ 552. Further, the court has held that compositions (inorganic compound) are indefinite for being defined in terms of properties (pyroelectric properties) alone. *Ex parte Spacht*, 165 USPQ 409 (PO Bd Pat App 1969); *Ex parte Slob157* USPQ 172 (PO Bd Pat. App 1967); *Ex parte Pulvari*, 157 USPQ 169 (PO Bd

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Pat. App 1966). The reference specifically or inherently meets each of the claimed limitations in their broadest interpretations. The reference is anticipatory.

Claim Rejections - 35 USC § 102/103

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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12. Claims 1, 4-13, 15, 17-20, 25-30, and 36-37 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Pat. 5,472,777 (hereinafter Kineri).

Kineri teaches a composite oxide (ABO_3) comprising of $(Pb_{0.89-0.91}La_{0.11-0.09})(Zr_{0.65}Ti_{0.35})O_3$. (Col. 7, line 10). Kineri also teaches the A atom may be substituted by elements including Li, Na, and K and B atom may be substituted by elements including Ta and Nb (Col. 2, lines 26-30). The A atom of Kineri is readable on component A and component B and maybe independently selected from Li, Na and K. The B atom of Kineri is readable on component C and component D and maybe independently selected from Ti, Zr, Ta and Nb. The composite oxide compound of Kineri is readable on the claimed inorganic compounds. Thus, the said compound of Kineri is expected have a similar pyroelectric property as claimed since the court had held that structurally similar compounds are generally expected to have similar properties. In re Gvurik, 596 F. 2d 1012,201 USPQ 552. Further, the court has held that compositions (inorganic compound) are indefinite for being defined in terms of properties (pyroelectric properties) alone. Ex parte Spacht, 165 USPQ 409 (PO Bd Pat App 1969); Ex parte Slob157 USPQ 172 (PO Bd Pat. App 1967); Ex parte Pulvari, 157 USPQ 169 (PO Bd Pat. App 1966). The reference specifically or inherently meets each of the claimed limitations in their broadest interpretations. The reference is anticipatory.

In the alternative Kineri is insufficient to anticipate the above listed claims, it would have nonetheless been obvious to the skilled artisan to produce the claimed

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inorganic compound, as the reference teaches each of the claimed components within the claimed proportions.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over either U.S. Pat. 4,601,883 (hereinafter Sekido), U.S. Pub. 2002/0117647 A1 (hereinafter Roeder), U.S. Pub. 2002/0177008 A1 (hereinafter Shirakawa) or U.S. Pat. 5,472,777 (hereinafter Kineri).

Although the prior art did not teach the inorganic compound use in a device having an acoustic wave propagation element and in a birefringent medium, nonetheless a *prima facie* case of obviousness exists because the different intended uses are not distinguishable in terms of the inorganic compound composition, see *In re Thuau*, 57 USPQ 324; *Ex parte Douros*, 163 USPQ 667; and *In re Craige*, 89 USPQ 393.

15. In view of the foregoing, the above claims have failed to patentably distinguish over the applied art.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571)272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Kopec/
Primary Examiner, Art Unit 1796

/KTN/
10/06/2007